INTERVIEW

Robert Fogel

In the early 1960s, few economic historians engaged in rigorous quantitative work. Robert Fogel and the "Cliometric Revolution" he led changed that. Fogel began to use large and often unique datasets to test some long-held conclusions — work that produced some surprising and controversial results. For instance, it was long believed that the railroads had fundamentally changed the American economy. Fogel asked what the economy would have looked like in their absence and argued that, while important, the effect of rail service had been greatly overstated.

Fogel then turned to one of the biggest issues in all of American history — antebellum slavery. In 1974, he and Stanley Engerman published *Time on the Cross*. They argued that on the eve of the Civil War, slavery was far from a dying institution. Compared to Northern agriculture, slave-based agriculture was relatively efficient. Moreover, slave labor was being put to productive uses in the manufacturing sector. Fogel and Engerman were certainly not justifying the South's "peculiar institution" — they were simply trying to understand and explain how that system functioned economically. Nevertheless, the book drew considerable criticism. Many of its conclusions, however, have stood the test of time and it has become a classic work in economic history. More recently, Fogel has turned to questions of economic demography, including why life spans have increased so significantly in the developed world.

Fogel started his teaching career at Johns Hopkins University, where he received his Ph.D. in 1963. He subsequently taught at the University of Rochester, the University of Chicago, and Harvard University, before returning to the Chicago faculty in 1981. Fogel was awarded the Nobel Prize along with another economic historian, Douglass North, in 1993. Aaron Steelman interviewed Fogel at his office in Chicago on November 13, 2006.

RF: I understand that your initial academic interests were in the physical sciences. How did you become interested in economics, especially economic history?

Fogel: I became interested in the physical sciences while attending Stuyvesant High School, which was exceptional in that area. I learned a lot of physics, a lot of chemistry. I had excellent courses in calculus. So that opened the world of science to me. I was most interested in physical chemistry and thought I would major in that in college, but my father said that it wasn't very practical and persuaded me to go into electrical engineering. I found a lot of those classes boring because they covered material I already had in high school, so it wasn't very interesting and my attention started to drift elsewhere. In 1945 and 1946, there was a lot of talk about whether we were re-entering the Great Depression and the widely held view was that we could not have full employment in a capitalist society. So those debates started to shift my interests to the social sciences and economics in particular.

RF: The 20th century has been a period of remarkable progress. Yet, as you have written, in the era immediately following World War II, many economists did not expect the American economy to do as well as it has. Similarly, economists generally believed that the future for many developing countries was going to be significantly bleaker than it turned out — that population growth was going to be a major problem and that it was quite unlikely that we would see such rapid progress among the "Asian Tigers," for instance. What do you think accounts for those overly pessimistic forecasts?

Fogel: A lot of it was the difficulty of escaping from the impact of the Great Depression and the influence of Keynesianism, one reading of which seemed to suggest that whatever had propelled capitalist economies during the 19th century and early part of the 20th century — major technical advances, the settlement of the frontier — had run out of steam. This view was common at Harvard, Princeton, and most of the other Ivy League schools. But it was hotly contested by people such as Arthur Burns and Wesley Mitchell who were centered around the National Bureau of Economic Research and Columbia. So it never firmly took hold there or at Chicago.

But, in general, the profession had become pretty pessimistic about the future and feared that depressions would occur with some frequency. Simon Kuznets, for instance, was the least ideological economist I have ever known, but even he was very cautious about the economy's

future late into the 1940s. By then, he began to believe that we had entered a new era of economic growth and maybe the Great Depression was the exception, not the norm.

When I was beginning my graduate work at Columbia in 1956-1957, James Angell, who taught the monetary course and the basic macro graduate course, said that you still couldn't rule out the possibility that the economy was being kept afloat by wars. First, you had World War II and then you had the Korean War. So that uncertainty was still prevalent in the mid- to late-1950s, but I think it was beginning to shift as we started to see more technological change and export-led growth.

RF: How has the practice of *doing* economic history changed over the course of your career? For instance, how have improvements in the processing of huge datasets affected the research programs of economic historians?

Fogel: Prior to the mid-1950s, there were no high-speed computers and even the best in those days were not as good as my current laptop. When they said "create a loop," they were not talking metaphorically. They gave you a peg board and you literally wired a loop.

If you were interested in doing empirical research, especially from micro data, the work was incredibly time-intensive. First, data retrieval was very hard. We used to have to go into archives with paper and pencil and record information by hand. Second, once you had assembled the data, it took a long time to write and run the computer programs and to input the data by punch cards. So, as the technology improved, you no longer needed to place such a high burden on theory. You could take several competing theories, test them relatively quickly, and find out which one was the most promising. Over time, this led us to increase our ambitions. In the work I did on the aging of the Union Army recruits, we could do careful longitudinal studies with a lot of medical information from the military wartime records and, for those who survived the war, from the pension records. That would have been impossible just a couple of decades before.

RF: You were one of the pioneers in using rigorous quantitative methods to examine questions in economic history. How was this approach received initially?

Fogel: Our teachers were very encouraging. They felt that what we were doing was new and important. Often, they did not have the same focus, but they thought that our techniques were appropriate. And those, like Kuznets, who were very empirically oriented, were, of course, supportive of the work. We did run into problems with some of the younger people, though. I remember going to one meeting of the British Economic History Society. Some young economic historians there said, "If you succeed, we will be unemployed." So they felt we were a threat, but they were wrong because the "old-fashioned" analytical history is always relevant. We did not want to replace that. We were providing an additional dimension. Happily, I think that strife has largely ended. The people who were at war with quantifiers will now say, "If quantification will help, by all means, count." They no longer think we are barbarians.

To do economic history well, you need to understand the social context in which people were acting, and a lot of that is qualitative, not quantitative. You have to understand from where the data have come — and whether the data are real. That's old-fashioned history.

I will give you an example. Bill Parker, who was an economic historian at Yale and one of the earlier cliometricians, was interested in the annual growth of cotton farming in the 19th century. He found a pamphlet produced by the Department of Agriculture that gave data for cotton production by county between census years. So he went to see the head of the department's statistical division, showed him the pamphlet, and asked if he had the raw data that were used to put it together. The fellow said he did not have the data but the man who wrote the pamphlet was still alive, occasionally came into the office, and the next time he did he would call Bill, who was working in Washington that year. So Bill eventually spoke to him and asked him how he collected the data. He said: "Well, I had the 1870 and 1880 census data. I had a big map of all the counties with information on elevation and other soil properties. I looked at the map and I looked at the census and I put those balloons where I thought they ought to be."

So that happens. Some of the data are manufactured. Just because something is in print doesn't mean it can be trusted. You have to go back and find out how those data were generated.

Also, there are all kinds of mistakes that are made in the census. When we go back to the original manuscripts, we find errors, with a column being shifted over a slot, or simple arithmetical problems, which means the numbers are not internally consistent. Those data might be useful for setting

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upper or lower bounds. Or, in certain cases, the effect of a bad number on your overall result will be so small that you can use it. But you have to be very careful.

RF: It seems that the United States has reached a point in its development that would have been remarkable to people just 50 years ago. For instance, food is so plentiful and cheap that we seem to be more concerned about obesity than malnutrition among those in the lower part of the income distribution. How large, in your opinion, are the changes that we see in the way people live today and what significance does that have for the way we should look at the process of economic growth?

What we currently call the poverty line is so high that only the top 6 percent or 7 percent of the people who were alive in 1900 would be above it.

Fogel: First of all, we are much richer than we used to be. What we currently call the poverty line is so high that only the top 6 percent or 7 percent of the people who were alive in 1900 would be above it. That, by the way, is also true when you compare us to other developed countries.

England is a rich country but we are 50 percent richer, and we do things that seem wasteful to the English. My wife came down with pneumonia in 2001 in London. She was treated at one of the city's top hospitals, Guy's and St. Thomas' Hospital, which is directly across from Parliament. Everything there was in wards, whereas in the United States rooms are typically private or semi-private. Americans today are used to having a phone beside their bed and 40 channels of television to watch while they are recuperating from an illness. That is unusual, even in other rich countries. Also, the way the diagnosis of her ailment was conducted was different from the typical procedure used in the United States. The doctors and nurses were very good but they never X-rayed her. They just listened to her lungs and came to the conclusion that she had pneumonia. If she had been in the United States, the doctors typically would have X-rayed her as a precautionary measure. So we make all sorts of investments that the British are not willing to make. They spend $1,193 per person per year on health care, while we spend $3,724.

We can do that because food, clothing, and shelter, which used to be 80 percent of a family's expenditures, now account for only 35 percent. And a large part of the food expenditures actually go toward services rather than on consuming nutrients — for instance, when you eat at a restaurant or when you buy food at a supermarket that is highly processed. So we have become much richer over time and also compared to the rest of the world.

I think there is a synergy between technological improvements and physiological improvements. As you suggested in the question, we are not the same people that we were in the past. The life expectancy 350 years ago was about 30 years at birth while it's about 78 years now in the United States and England. We're taller than we were by about 10 inches and the median weight is about 50 percent greater. Our immune systems function much better and our endocrine systems work better. Also, if you have a health problem, we have interventions that are very effective. So, the advances in public health and in medical technology have allowed us to improve the quality of life. Of course, health care is more expensive too. But that's a trade-off that a rich country can afford to make.

RF: Per-capita income grew very rapidly during the 19th century, yet life expectancy did not seem to be greatly affected until the 20th century. How would you explain that? Is it simply, or at least mostly, a matter of significant innovations, especially in the pharmaceutical and medical industries, during the 20th century?

Fogel: Part of it is that technological advances tend to build on each other. For instance, we did not get really good control over the techniques for purifying drinking water until about World War I, but we needed everything that was done up to that point to figure out how to do it. Then there was a diffusion process. Some cities implemented systems quickly but others didn't because it was very costly. There is a very interesting article by David Cutler and Grant Miller looking at the arguments in different cities for and against spending money on water-purification projects. It often took cities many years to finally go ahead and fund those projects.

We have looked at the relative importance of such large-scale public health programs and it appears that they did a great deal to expand life expectancy. Then there are issues regarding the preparation and distribution of food products. In 1900, about a third of cows in the United States had bovine tuberculosis. Even when dairies started to pasteurize the milk, it wasn't very effective. There were a lot of contaminants that made it into the milk. So we probably didn't get a safe milk supply until the 1930s. Poultry is another example. Kids now think that chicken is something that is manufactured in some plant. They don't realize that it was once a living animal. When I went shopping with my mother and you wanted a chicken, the butcher would go in the back room and bring out a live chicken. My mother would feel its breast and say, "No, I don't want that one. Bring me another one." When she would finally choose one, the butcher would break its neck, chop its head off, and bring it back to us plucked and singed. That process introduced possibilities for contamination. Now, the purity of the food supply is very good — so good that when a problem slips through, it makes national headlines.

The people who have benefited the most from these innovations have been the poor. Those at the top of the income distribution were always eating the best food available. They also were living in houses that were separated from the rest so they didn't have to worry about their wells being contaminated by seepage from the neighboring buildings. So the major beneficiaries of these public-works projects and technological changes have been the poor, who now have access to safe food and water, which is relatively cheap. But the wealthy also have benefited since the odds of cross-contamination are now low.

RF: Could you please describe what you mean when you use the term the "Fourth Great Awakening"? And how does this concept differ from, say, Ronald Inglehart's idea of "post-materialism"?

Fogel: Inglehart is one of many writers who have dealt with post-consumerism. The basic idea is that once a society reaches a certain level of material wealth, people really take many material things for granted and begin to search for other things — nonmaterial things — to enrich their lives. The example I like the most is that in 1870, the head of the household used to have to work about 2,000 hours to provide the annual food supply for the family. Now, that person has to work only about 240 hours. And with the price of food still declining, that figure will soon be closer to 160 hours.

Here is another example: We now take electricity for granted, but to make electricity widely available, you have to build up a huge physical structure that produces and distributes it. I'm old enough to remember when not all parts of New York had electricity. They had metered gas as the form of lighting. You would put a quarter into the meter and get 24 hours of gas or something like that. In fact, when I was an undergraduate, I read that about two-thirds of the houses in the 1930s did not have electricity. I didn't realize how new electricity was, and we did not finish providing electricity to the rural areas until the 1960s.

Well, my kids don't remember a time when you did not have televisions. In fact, TV sets were so cheap when they were growing up that you could afford to have one for each person rather than having to fight over who was getting to watch their favorite program on the lone set. What is available to the mass public is so much greater than what was available not so long ago. Going to the opera used to be considered an elite activity. What is new is that even a person with modest income can rent a DVD of an opera. So people's discretionary time has increased dramatically and they are able to pursue interests that they could have only dreamed of in the past. That, I think, marks a whole new age for many Americans.

RF: Culture was a subject that interested many of the classical economists but fell out of favor for a while and now has experienced somewhat of a rebirth. In your opinion, how important of a role does culture play in a country's economic development? And from a purely methodological standpoint, how do you measure that?

Fogel: It's true that the impact of culture is difficult to measure. But if you assembled a group of economic historians and development economists in a room, I think there would be nearly unanimous agreement that there are some cultures that are pro-growth and some that are anti-growth. I'm writing an article for *Daedalus* in which I forecast global growth rates, with a special emphasis on the European Union (the original 15 members), the United States, China, India, and about half a dozen Southeast Asian countries. In it, I argue that China's per-capita income will grow about 8 percent per year until about 2040, while India's will grow about 6 percent, even though India's growth rate is currently higher than that.

The reasons I give are largely cultural. There are too many people in India — some call them "rural romantics" — who would be willing to pay a price of two or three points in the growth rate in order to preserve certain traditional values. Also, there are more ethnic minorities in India than there are in China. Over 90 percent of China's population is Han Chinese and although the central government worries about the Western provinces, which are mostly Muslim, that problem is more economic than political. In fact, China is subsidizing those provinces in order to reduce the gap between them and the coastal areas.

Robert Fogel

➤ Present Position

Charles R. Walgreen Distinguished Service Professor of American Institutions, Graduate School of Business, University of Chicago

➤ Previous Faculty Appointments

Johns Hopkins University (1958-1959), University of Rochester (1960-1964 and 1968-1975), University of Chicago (1964-1975), and Harvard University (1975-1981)

➤ Education

B.A., Cornell University (1948); A.M., Columbia University (1960); Ph.D., Johns Hopkins University (1963)

➤ Selected Publications

Author or co-author of several books, including *Railroads and American Economic Growth: Essays in Econometric History* (1964); *Time on the Cross: The Economics of American Negro Slavery* (1974); *Without Consent or Contract: The Rise and Fall of American Slavery* (1989); *The Fourth Great Awakening and the Future of Egalitarianism* (2000); and *The Escape from Hunger and Premature Death, 1700-2100: Europe, America, and the Third World* (2004)

➤ Awards and Offices

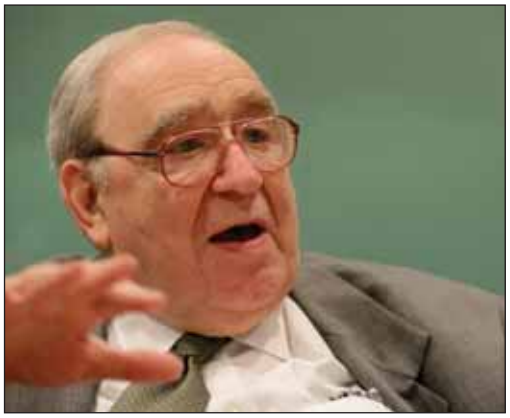
Co-winner of the Nobel Prize in Economic Sciences (1993); Fellow, American Academy of Arts and Sciences; Member, National Academy of Sciences; Past President of the American Economic Association and the Economic History Association

I think that there are too many cultural issues in India for them to be quite as focused as China in pursuing high-growth policies.

This is analogous in a sense to the European countries: They are willing to make similar sacrifices in their growth rates in order to preserve what they see as important cultural values, such as equality. There are similar forces at work in the United States. For instance, I believe that the Green Party, if it ever achieved much political success, might sacrifice economic growth in order to achieve other ends. It is possible for rich countries to achieve both — to get rapid economic growth while enacting reforms to ameliorate the social problems they see as so important.

RF: You have made contributions to a very large number of topics in economic history, but it seems clear that your work on slavery in the antebellum United States — especially *Time on the Cross* — has garnered the most attention. How did you become interested in the topic and how, if at all, have your views changed since that book was published?

Fogel: First of all, we did not initially believe what we were finding. The debate over the economics of slavery was an old one. It went well back into the 19th century. But the view that dominated was the Republican view of slavery, which was a political view, not an economic one. It included the proposition that slavery was so bad economically that it even made the slave owners worse off. That view appears in the work of Frederick Law Olmsted, when he said that a slave owner with 50 slaves was poorer than the average policeman in New York City. When you think of each slave as having the value of a Rolls-Royce in today's dollars, imagine how far off Olmsted's argument seems to be. It was only ideology that could produce this type of argument.



The abolitionists, especially the fundamentalists, knew that slavery was wrong, that it was a sin. So that's all there was to it — there was no discussion beyond how to get rid of it. William Lloyd Garrison believed in immediate emancipation gradually carried out. Salmon Chase — who was the governor of Ohio, Secretary of the Treasury, and later a Supreme Court justice — was the most brilliant abolitionist politician. Chase's reaction to Garrison was that Garrison wanted to wear sackcloth and eat burnt ashes, while Chase wanted to build coalitions broad enough to bring the system down, even though that involved compromising some principles. So the abolitionists were similar to the Religious Right. They believed they were in direct contact with God. Many of the famous abolitionists at one point or another walked into the woods and had a spiritual encounter. They were not people who could be said to be big believers in the Chicago School of economics.

So when the cliometricans started out, it was widely believed that a system as evil as slavery could not be economically efficient. But there had been some economists who had measured the profitability of slavery and found that it was a profitable enterprise. Slave owners made at least the market rate of return. But few doubted that it was less efficient than free labor in the North; there really wasn't another side to the argument. When we first performed a back of the envelope calculation, it turned out that slave farms were 6 percent more efficient than free farms.

Stan Engerman and I found that result silly so we decided to do a more careful study. We thought that we would then find that slavery was something like 90 percent as efficient as Northern labor. That was a smaller gap than we originally thought it would be, but it still was the less efficient of the two systems. However, the more refined calculations produced a different result. It showed that slave agriculture was 36 percent more efficient than free agriculture. So we had a problem at that point — our results did not conform to what we had predicted or what theory might suggest — so we did what economists do when faced with such a dilemma: We applied to the National Science Foundation and got a grant to study the issue in more depth.

W. W. Norton put out a new edition of *Time on the Cross* in 1989, in which Stan and I wrote an epilogue. The long and short of it was that we were all sucked in by the political argument. But when you started looking at the numbers, the Republican account just did not hold up. So it was very shocking. We got into deep arguments with friends. My wife and I were close friends with Peter Temin and his wife, but the slavery debate led to some discord between Peter and me. So our wives brought us together and said, "You can argue as much as you want in your offices, but once you cross the threshold of either house, forget it." I think, on the whole, we managed not to undermine personal relationships, even though the sometimes-bitter debate that followed the book's publication could have done that. Also, I felt very uncomfortable thinking of slaves as a commodity. It was very hard to talk about it in class. I always felt a sense of embarrassment and felt the need to make it clear that I was not in favor of slavery. The fact that slavery was efficient did not mean that it was good.

RF: I notice that you are close to publishing a collection of interviews with economists. Whom did you speak with for that book and what insights do you expect will emerge about the changing nature of economics during the 20th century?

Fogel: My wife and I are writing a small book called *Simon Kuznets and the Empirical Tradition in Economics*. For the book, we did many interviews. Some of the people we talked with knew Simon well personally, while some of them had little connection to him but were intellectual leaders in economics. We are using some of this material in the book, but there was also a lot of interesting material that simply did not fit. So we decided that we would collect these interviews and publish them separately in a book that is tentatively titled *The Transformation of Economics, 1914-1980: Interviews with Economists*. For instance, we have about eight hours of interviews with Milton and Rose Friedman. Milton had worked closely with Simon, co-authoring an important book titled *Income from Independent Professional Practice*, part of which also served as Milton's dissertation. The interviews with the Friedmans are wide-ranging and provide a superb history of the economy and of the discipline. There is some overlap with the material in their autobiography, *Two Lucky People*, but most of the discussions break new ground.

RF: There's a large gap in your academic CV from 1948, when you finished your undergraduate degree, to the mid-1950s, when you enrolled in graduate school. What were you doing during that period?

Fogel: When I graduated from college, I had two job offers. One was from my father, to join him in the meat-packing business. That would have been quite lucrative. The other was as an activist for a left-wing youth organization. I chose the latter and worked as an activist from 1948 to 1956. At the time I was making that decision, my father told me: "If you really believe in that cause, come work with me. You will make a much higher wage and you could give your extra income to hire several people instead of just yourself." I thought, well, that makes some sense. But I was convinced that this was a way to get me to change my views or at least lessen my commitment to an ideological cause that I found very important. Yes, the first year, I might give all of my extra money to the movement, but every year I would probably give less, and finally reach the point when I was giving nothing at all. I feared I would be co-opted. I thought this was my father's way of indoctrinating me.

So I went to work as an activist. At first, I thought what I was doing was important. But over time, I started to become disillusioned. The Marxists had predicted a depression in 1947-1948. That didn't happen, so they said, it will happen the next year. But it never came. So by the early 1950s, I began seriously reconsidering my position. I had been drawn to Marxism because I thought of it as a science. But it was pretty clear that its "scientific" predictions were wildly off the mark. I was ready to leave the movement, but then McCarthyism started to heat up and that led me to hesitate. I stayed a few more years to fight against McCarthyism. But by 1955 and 1956, the horrors that had occurred under Stalin, which we had all heard about but didn't really believe, were confirmed by Khrushchev. That was the breaking point in a sense. I began to rethink my views and especially my involvement with Marxism. So I decided that I needed to receive more serious training in economics and the social sciences generally and went to Columbia.

RF: Did the failures of Marxism to accurately analyze the economic situation in the United States influence you to pursue work that was heavily data driven and empirical?

Fogel: There is no doubt about that. As I said, Marxism was sold as a science, but it became clear that it was not. It was more of an ideology than anything else. My early experiences made me very skeptical of ideologues of any persuasion. I'm willing to be surprised, to accept seemingly radical ideas, but there better be data to back up those claims, and Marxism could not provide that type of evidence.

RF: Which economists have influenced you the most?

Fogel: Well, obviously Simon Kuznets would be at the top of the list. The older I get, the more I realize the extent to which my whole outlook on economics was shaped by him. George Stigler had a big influence on me, first as a student at Columbia and then as a colleague at Chicago. I took his price theory course at Columbia. He was an extremely smart man, a great teacher, and had a great wit. I never got heavily involved in monetary economics, but I was certainly influenced by Milton's empiricism. Robert Solow also had a huge influence on me. He provided a framework for looking at growth that was extremely useful in my work. Tom Schelling was another strong influence on me. You couldn't be at Harvard without being impressed by him. He has one of the most probing, original minds I have ever encountered.

I would say, though, that the biggest influence on me has been my graduate students, many of whom I have collaborated with very closely. The story I am about to tell is already in print, but it's worth recounting. It's about a casual lunch that several of us had at the Quadrangle Club. Harry Johnson, Al Harberger, Zvi Griliches, and I were there. During the conversation, Mike Mussa's name came up, and we each said that Mike knew as much about our field as we did. He had processed all this information and theory that he had taken from his classes and synthesized it in a remarkable fashion. But none of us was willing to say that we each knew as much as all four people at that lunch.

On the slavery issue, Claudia Goldin did some really insightful work as a graduate student. Dora Costa's dissertation, which in book form won the Paul A. Samuelson Award, has had a major influence on the study of changes in the process of aging over the course of the 20th century.

Some people are able to carry out their work on their own, but not the type of research I have done or am doing currently. One person can master only so many skills, and for my work you really need to have collaboration with others. I have been very fortunate to have had such a great group of colleagues and students. **RF**